



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 :

G02B 6/24, 6/26

A1

(11) International Publication Number:

WO 99/59012

(43) International Publication Date: 18 November 1999 (18.11.99)

(21) International Application Number: PCT/US98/09447

(22) International Filing Date: 8 May 1998 (08.05.98)

(71) Applicant (for all designated States except US): THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK [US/US]; 116th Street and Broadway, New York, NY 10027 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LEVY, David, S. [US/US]; 4197 Birchwood Avenue, Seal Beach, CA 90740 (US). SCARMOZZINO, Robert [US/US]; 13 Lancaster Avenue, Montrose, NY 10548 (US). OSGOOD, Richard, M., Jr. [US/US]; 345 Quaker Street, Chappaqua, NY 10514 (US).

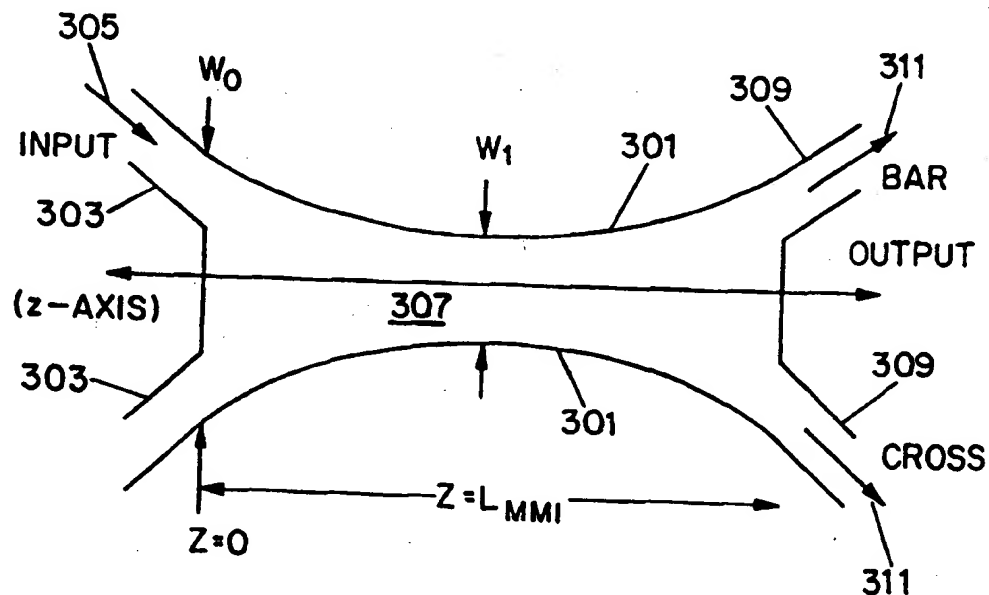
(74) Agents: TANG, Henri et al.; Baker & Botts, LLP, 30 Rockefeller Plaza, New York, NY 10112-0228 (US).

(81) Designated States: CA, JP, US.

Published

With international search report.

(54) Title: REDUCED SIZE MULTIMODE INTERFERENCE BASED COUPLER



(57) Abstract

The Multimode Interference coupler according to the invention has smoothly continuous inwardly tapered sidewalls (301) which define the width of the multimode region (W_1) along the propagation axis of the device. The inward taper causes the average width of the device to be reduced in comparison to known couplers having straight sidewalls (202). Further, the invention allows the access waveguides (303, 309) to remain sufficiently spaced, while reducing the overall length of the device, to avoid lithographic gap fill-in and unwanted optical coupling between the access waveguides.

T00240 T284/960